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THE CASTANHEIRA SITE: NEW EVIDENCE ON THE ANTIQUITY AND HISTORY OF THE ANANATUBA PHASE (MARAJÓ ISLAND, BRAZIL)

MARIO F. SIMÕES

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THE CASTANHEIRA SITE: NEW EVIDENCE ON THE ANTIQUITY AND HISTORY OF THE ANANATUBA PHASE (MARAJÓ ISLAND, BRAZIL)

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ABSTRACT

The geographical distribution of the Ananatuba phase has been extended to the eastern coast of Marajó by the discovery of J-26: Castanheira on the right bank of the middle Rio Camará. Two stratigraphic cuts were excavated, and the pottery obtained was classified into the types established by Meggers and Evans (1957). The resulting seriated sequence shows trends of ceramic change parallel to theirs and a similar intrusion of Mangueiras phase sherds in the upper levels of the deposit. Interdigitation of the J-26 levels into the seriated sequence for the Ananatuba phase shows the new site to occupy a relatively late position, supporting the earlier inference of expansion from the north coast toward the southeast during the history of the phase. A charcoal sample obtained from Cut 1, Level 40–50 cm., and correlating with the appearance of Mangueiras phase sherds in the refuse, gave the date of 980 B.C. ± 200 (SI-385), which places the initial occupation of Marajó by pottery-making groups within the Formative period.

THE Ananatuba phase, the earliest of the pottery-making cultures at the mouth of the Amazon, was first recognized by Meggers and Evans (1957) during archaeological investigations undertaken two decades ago on the north-central part of the Island of Marajó. Employing methods of stratigraphy, quantitative ceramic analysis, seriation, and other kinds of evidence, these authors were able to establish a sequence of five archaeological phases on the island prior to the Portuguese conquest in the 17th century. On the basis of the evidence then available, they suggested temporal and spatial dimensions for the various phases. The Ananatuba phase was postulated to have been introduced around A.D. 700 onto the north coast of Marajó, from which it spread over an approximately triangular area southeastward to Lago Ararí It came to an end with domination and assimilation by the Mangueiras phase people, the second group to arrive on the island (Meggers and Evans 1957: 421, Fig. 145).

Except for investigations by Hilbert in 1950-51 east and southeast of Lago Ararí (Meggers and Evans 1957: 179, 203, 266-7, 299-301, 316; 319-22), no further work was undertaken until 1962, in spite of the size and accessibility of the island and the fact that a large portion remained archaeologically unknown. In 1962, the author and Napoleao Figueiredo secured the cooperation of the owners of the land between the Rios Goiapí and Camará, southeast of Lago Ararí, permitting the design of a long-term research program with the aims of testing the validity of the reconstructions reached by Meggers and Evans for the north coast and, also, of providing field training for students. The program was financed by the Universidade Federal do Pará and the Museu Paraense Emílio Goeldi in the 1962-64 seasons, and subsequently by the latter institution alone. In four seasons of field work, 16 new sites have been subjected to stratigraphic testing, and several samples have been collected for radiocarbon analysis. Of the sites, 10 belong to the Marajoara phase, 5 to the Formiga phase, and 1 to the Ananatuba phase (Simões 1967: 214, 222).

This article will present the results of ceramic analysis and seriation of pottery from the Ananatuba phase site, PA-J-26: Castanheira, and will compare these with the Ananatuba phase seriated sequence obtained by Meggers and Evans (1957), as a basis for evaluating the significance of the radiocarbon date.

SITE AND EXCAVATIONS

The Castanheira site (J-26) is located on the right bank of the middle Rio Camará, which flows eastward into the Baía de Marajó (Fig. 1). Being navigable throughout most of its course, it is the principal route of penetration into this part of the island. Except at the height of the dry season, it connects with Lago Ararí via a canal or "furo," which links its headwaters with the Igarapé dos Bichos, a tributary of the Rio Goiapí, which in turn is an affluent of the Rio Arari. The site occupies a nearly circular island surrounded by the Igarapé da Castanheria, within the gallery forest (Fig. 2). Maximum elevation at the northeast sector is 1.8 m. above July water level. The island is overgrown with trees and shrubs, although vegetation is less dense than in the surrounding gallery forest. The edge of the savanna is about 40 m. to the east, 120 m. to the north, and 200 m. to the south.

The refuse area has a maximum diameter (east-west) of 85 m. and covers about 3,000 sq. m. Numerous sherds are scattered over the surface, with somewhat greater concentrations in the northwest and southeast sectors, where they extend to the bed of the Igarapé. The ruins of

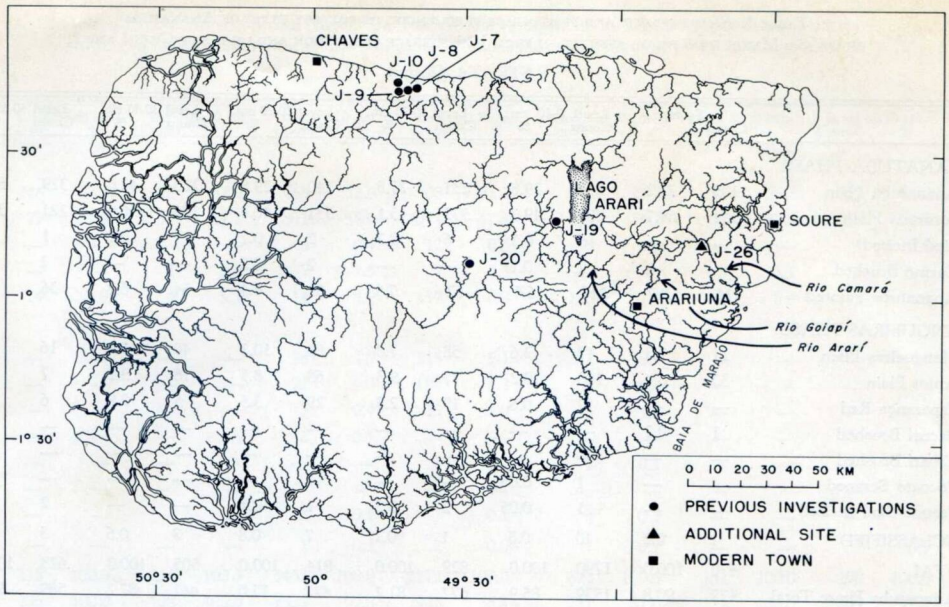

FIG. 1. Marajó Island, showing the riverine system and the location of sites of the Ananatuba phase.

a house, as well as posts and fragments of tile and glass on the northeast summit (Fig. 2), and the remains of two wells on the southeast are survivals of a modern habitation that terminated in 1945.

Two stratigraphic cuts were excavated in locations where surface sherds were abundant and recent disturbance was minimal. Both were 1 x 1 m. and were controlled in arbitrary 10-cm. levels until sterile soil was reached. Sherds were abundant to a depth of 70 cm. Humus containing numerous roots in the upper levels was encountered in Cut 1 to a depth of 50 cm., where the soil changed to dark gray color and clayey texture. This was replaced below 65 cm. by yellowish sandy clay, which continued to 1.65 m., where the test was abandoned. In Cut 2, in the southeast sector, the humus layer changed to dark gray clayey soil at 35 cm. The latter, containing lenticular inclusions of yellowish clay, continued to 55 cm., below which extended the sterile yellowish clay also underlying the refuse deposit in Cut 1.

Materials recovered from two excavations are as follows: Cut 1—4,914 sherds, 146 clay lumps, and 6 lateritic concretions; Cut 2—4,944 sherds, 4 worked sherd disks, 4 cylindrical pottery objects, 1 stone flake, 63 clay lumps, and 14 lateritic concretions. Charcoal in sufficient abundance to be suitable for radiocarbon dating was encountered only in Cut 1, Level 50–60 cm., although traces were noted in other levels of both cuts. The surface sample was obtained by collecting all sherds within two 2- by 2-m. areas, one on the northwest and the other on the southeast part of the site. It contains 470 sherds and 1 small cylindrical object of pottery.

CERAMIC ANALYSIS AND SERIATION

The 10,328 sherds obtained from the two excavations and the surface collection were classified into the types described by Meggers and Evans, and percentage frequencies were calculated for each sample (Table 1). Interdigitation of the levels from the two stratigraphic excavations produced the seriated sequence for the site (Fig. 3). Classification revealed that 8,981 or 87 percent of the sherds belonged to Ananatuba phase pottery types and 1,312 or 12.7 percent to Mangueiras phase types, while 35 to 0.3 percent remained unclassified.

All the pottery types identified by Meggers and Evans were represented. The principal

TABLE 1. SHERD COUNTS AND PERCENTAGE FREQUENCIES OF POTTERY TYPES OF ANANATUBA PHASE AND MANGUEIRAS PHASE AFFILIATION FROM J-26, SURFACE COLLECTION AND LEVELS OF CUTS 1 AND 2.

STRATA CUT 1

	Surface		Level 0-10 cm.		Level 10-20 cm.		Level 20-30 cm.		Level 30-40 cm.		Level 40-50 cm.	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
ANANATUBA PHASE												
Ananatuba Plain	109	23.2	534	29.8	231	27.8	240	29.5	220	43.6	329	52.9
Sororoco Plain	304	64.7	880	49.3	373	45.1	331	40.8	186	36.9	221	35.6
Sipó Incised	—	—	6	0.3	6	0.7	2	0.2	1	0.2	1	0.1
Carmo Brushed	—	—	2	0.1	—	—	2	0.2	—	—	2	0.3
Ananatuba Painted	14	3.0	117	6.5	62	7.5	52	6.4	34	6.7	36	5.8
MANGUEIRAS PHASE:												
Mangueiras Plain	11	2.3	47	2.6	58	7.0	82	10.2	40	7.9	16	2.6
Anjos Plain	30	6.4	180	10.2	77	9.3	68	8.3	16	3.2	7	1.1
Esperança Red	—	—	12	0.6	19	2.3	29	3.5	5	0.9	6	0.9
Bacurí Brushed	1	0.2	—	—	—	—	—	—	—	—	—	—
Croarí Brushed	—	—	—	—	—	—	—	—	—	—	—	—
Pocoató Scraped	—	—	1	0.05	—	—	—	—	—	—	—	—
Pseudo-Sipó Incised	—	—	1	0.05	2	0.2	1	0.1	—	—	2	0.3
UNCLASSIFIED	1	0.2	10	0.5	1	0.1	7	0.8	3	0.6	3	0.4
TOTAL	470	100.0	1790	100.0	829	100.0	814	100.0	505	100.0	623	100.0
Ananatuba Phase Total	427	90.8	1539	85.9	672	81.2	627	77.0	441	87.2	589	94.6
Mangueiras Phase Total	42	9.0	241	13.6	156	18.7	180	22.2	61	12.2	31	5.0

trends consisted of a decline in Ananatuba Plain, characterized by a whitish surface and gray core, from 67 percent in the lowest level to 32.6 percent in the upper level of the seriated sequence, and a concomitant increase in Sororoco Plain, with a pinkish surface and oxidized core, from 27.1 to 56 percent of the total sherds per level. The most common decorated type is Ananatuba Painted, which increases erratically from 5.1 to 11.9 percent at the middle of the sequence, thereafter declining to 0.9 percent. Sipó Incised, the diagnostic decorated type of the phase, is absent in three of the four lowest levels; thereafter, its frequency varies between 0.1 and 0.9 percent. Carmo Brushed is absent or of minor occurrence in most levels and exhibits no consistent trend of change. The unclassified decorated sherds include seven examples with appliqué nubbins and one nicked rim. Five handles were included in the sample, one Ananatuba Plain and four Sororoco Plain.

Mangueiras phase sherds are restricted to the upper five levels of Cut 1 and the upper three levels of Cut 2 (Fig. 3); relative frequency per level ranges between a low of 5 percent in Cut 1, Level 40–50 cm., and a high of 22.2 percent in Cut 1, Level 20–30 cm. Mangueiras Plain and Anjos Plain sherds comprise 82.1 percent of the total sample, but all the decorated types previously described for the phase are also represented. In the seriated sequence, Mangueiras Plain attains a frequency of 10.2 percent, declining thereafter to 1.9 percent, while Anjos Plain increases from 1.1 to 10.2 percent, dropping to 5 percent in the upper level (Fig. 3). Of the decorated types, the most popular is Esperança Red, which expands from 0.9 to 3.5 percent and subsequently declines to 0.4 percent in frequency. Pseudo-Sipó Incised is present in most levels but never exceeds 0.3 percent. Bacurí Brushed, Croarí Brushed, and Pocoató Scraped are rare and never represent more than 0.1 percent of the total sherds per level.

The unclassified plain sherds include 6 tempered with bone and 29 tempered with sand. The former are limited to the surface and upper levels and relate to the recent caboclo occupation of the site. The latter occur sporadically to a depth of 50 cm. in Cut 1 and are of unidentified origin.

Ceramic artifacts are rare and represent the following kinds of objects: (1) one small cyl-

TABLE 1 (CONTINUED). SHERD COUNTS AND PERCENTAGE FREQUENCIES OF POTTERY TYPES OF ANANATUBA PHASE AND MANGUEIRAS PHASE AFFILIATION FROM J-26, SURFACE COLLECTION AND LEVELS OF CUTS 1 AND 2.

STRATA CUT 2

Level 50-60 cm.		Level 60-70 cm.		Level 0-10 cm.		Level 10-20 cm.		Level 20-30 cm.		Level 30-50 cm.		Level 50-70 cm.	
Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
146	62.3	79	67.0	465	32.6	708	31.2	288	32.3	85	56.3	127	67.0
75	31.8	32	27.1	801	56.0	1074	47.4	329	36.7	52	34.5	56	29.5
—	—	—	—	6	0.4	12	0.5	8	0.9	—	—	1	0.5
—	—	1	0.8	37	2.5	7	0.3	—	—	8	5.3	2	1.0
14	5.9	6	5.1	14	0.9	137	6.0	106	11.9	6	3.9	3	1.5
—	—	—	—	28	1.9	115	5.1	82	8.9	—	—	—	—
—	—	—	—	72	5.0	189	8.3	60	6.7	—	—	—	—
—	—	—	—	5	0.4	25	1.0	13	1.5	—	—	—	—
—	—	—	—	2	0.1	—	—	—	—	—	—	—	—
—	—	—	—	—	—	1	0.04	1	0.1	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	2	0.1	3	0.1	3	0.3	—	—	—	—
—	—	—	—	1	0.1	2	0.06	7	0.7	—	—	1	0.5
235	100.0	118	100.0	1433	100.0	2273	100.0	897	100.0	151	100.0	190	100.0
235	100.0	118	100.0	1323	92.3	1938	85.44	731	81.6	151	100.0	189	99.5
—	—	—	—	109	7.6	333	14.5	159	17.7	—	—	—	—

inder of Ananatuba Plain with slightly convex faces, possibly an ear plug; diameter is 2.5 cm., thickness 1.0 cm.; (2) four small cylinders with ends broken off, Ananatuba Plain, diameter about 2 cm.; (3) four sherds reworked into disks, three Ananatuba Plain and one Sororoco Plain. The only possible stone artifact was a flake that may have served as a scraper.

The charcoal sample collected from a hearth in Cut 1, Level 40-50 cm., was submitted to the Smithsonian Institution for analysis. An age of 2930 ± 200 years, or 980 B.C. (SI-385), has been obtained; this is the earliest radiocarbon date yet reported for a ceramic complex in the lower Amazon region.

HISTORY OF OCCUPATION

Two kinds of evidence can be used to reconstruct the history of the occupation of the site: (1) the difference in sherd density between the upper and lower levels of the refuse deposit, and (2) the position in the seriated sequence of levels showing these differences. The two cuts, although producing similar total numbers of sherds and of similar depth, differ in the distribution of sherds per level. In Cut 1, for example, all levels produced more than 100 sherds, and the upper five levels produced more than 500 sherds. In Cut 2, by contrast, three levels produced less than 100 sherds, and only the upper three exceeded 500 sherds each. The upper five levels of Cut 1 and the upper three levels of Cut 2 show Mangueiras phase mixture, and, in spite of the difference of 20 cm. in depths represented, they produced almost equal amounts of pottery. Specifically, the upper five levels of Cut 1 contained 4,537 sherds (3,868 of Ananatuba phase origin and 669 of Mangueiras phase origin), while the upper three levels of Cut 2 are represented by 4,593 sherds (3,992 from the Ananatuba phase and 601 from the Mangueiras phase). Similarly, the lower levels of both excavations, corresponding to pure Ananatuba phase occupation, are represented by samples of nearly equal size in spite of a difference in the thickness of the deposit. Cut 1, 50–70 cm., produced 353 sherds, while Cut 2, 30–70 cm., produced 341 sherds. This change in density equates with the natural stratigraphy, the mixed levels correlating with the humus layer and the unmixed ones with the

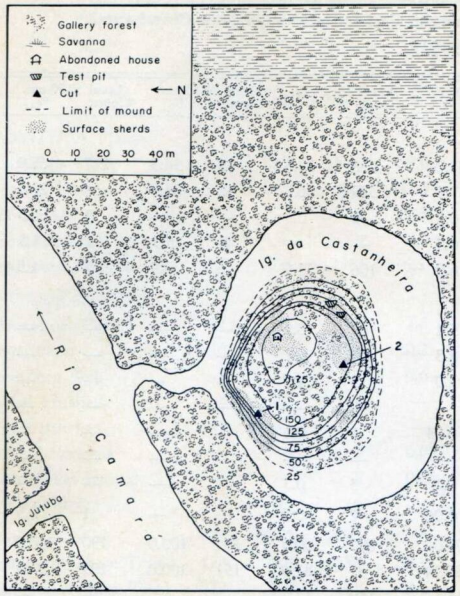

Fig. 2. Map showing the location of J-26 on an island surrounded by the Igarapé da Castanheira, on the right bank of the Rio Camará, and the position of stratigraphic Cuts 1 and 2.

dark gray clayey soil and upper part of the yellowish sandy clay.

The seriated ceramic sequence also provides a basis for dividing the refuse deposit into two unequal vertical segments. The earliest corresponds to the lower third of the graph, in which the lower two levels of Cut 1 and the lower four (combined into two) levels of Cut 2 are interdigitated, and in which only Ananatuba phase remains were encountered. The trends show a gradual change in popularity of Ananatuba Plain and Sororoco Plain, rare presence of Sipó Incised, relatively higher frequently of Carmo Brushed, and slightly erratic occurrence of Ananatuba Painted (Fig. 3). The upper two-thirds of the sequence, containing the remaining interdigitated levels of both cuts (five of Cut 1 and three of Cut 2) and showing Mangueiras phase mixture, exhibit an abrupt decline in the popularity of Ananatuba Plain, presence of Sipó Incised in all levels, reduced relative frequency of Carmo Brushed, and slight increase followed by a decline in popularity of Ananatuba Painted.

From these various lines of evidence, the following reconstruction of the history of the site can be postulated: (1) The site was occupied initially and for an unknown length of time by a small Ananatuba phase group, which settled more heavily on the northwest part of the site (corresponding to Cut 1), perhaps because this was closer to the mouth of the igarapé (Fig. 2). (2) Subsequently, there was sudden and sizable increase in the density of the resident population, implied by the abrupt change in density between sherds in the lower and upper levels, which equates with the appearance of the Mangueiras phase influence. Initially the most intensive Mangueiras phase occupation was in the southeast sector, where Ananatuba phase refuse had been lightest. Two hypotheses can be advanced relevant to this second period of occupation: (a) The site may have been abandoned

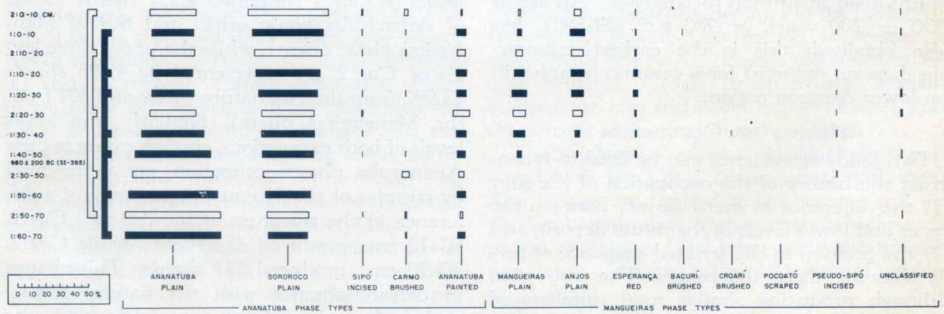

Fig. 3. Seriated ceramic sequence obtained by interdigitation of levels from Cuts 1 and 2 at J-26.

between the first occupation and the arrival of the later group of people; or (b) the initial population may have been augmented by Ananatuba phase immigrants from the north-central part of Marajó Island. In either case, the later immigrant group could have included Mangueiras phase potters incorporated through marriage or adoption, both practices attested among surviving indigenous Amazonian tribes. These alternatives seem more acceptable than acquisition of the pottery by trade in view of the large proportion of plain sherds of Mangueiras phase origin and agreement between relative frequencies observed at J-26 and those prevalent at pure Mangueiras phase sites.

COMPARISON WITH PREVIOUS RESULTS

The Ananatuba phase was previously represented by surface collections and stratigraphic excavations at six sites (Fig. 1): four on the north coast of Marajó (J-7, J-8, J-9, J-10), excavated by Meggers and Evans; and two near the center of the island (J-19, J-20), investigated by Hilbert (Meggers and Evans 1957: 174-9). All have been described as located in patches of forest near the edge of the savanna and distant from the coast. Village refuse is dense and occupies a circular or oval area; depth of the deposit ranges from 60 to 100 cm. (Meggers and Evans 1957: 193). In location, form, depth and density of refuse, site J-26: Castanheira agrees perfectly with the settlement pattern description of the previous investigators.

As concerns pottery, all the types originally established for the Ananatuba phase were identified at J-26, with a minor variation in the paste of two of the decorated types. Ananatuba Painted and Sipó Incised, described as having a paste comparable to Ananatuba Plain (Meggers and Evans 1957: 180, 185), include some examples with paste resembling Sororoco Plain (4.7 percent), although Ananatuba Plain paste predominates (12.6 percent). This variation is attributable to the increased popularity of Sororoco Plain at J-26, reflecting its later position in the seriated sequence (Simões 1967, Fig. 8).

The attempt at interdigitation of the stratigraphic cuts at J-26 into the seriated sequence presented by Meggers and Evans (1957, Fig. 56) for the Ananatuba phase met with a slight difficulty. Although the lower four levels of the J-26 seriation fit easily into the middle of the sequence, the upper eight do not interdigitate with the upper levels of J-7 because of the distortion produced in the latter samples by the Mangueiras phase component. Two solutions seemed to be suggested: (1) reseriation of the upper levels of J-7 using Ananatuba phase sherds only, and excluding from the total used as a basis for percentage calculation the Mangueiras phase sherds (as Meggers and Evans did in constructing the seriated sequence for the Mangueiras phase; Meggers and Evans 1957, Fig. 72); or (2) elimination of the disturbed J-7 levels from the seriated sequence since, as the original authors noted, they correspond to

> a time when the culture was being subjected to strong disruptive pressures that had the effect ceramically of suppressing or selecting certain of the pottery types and thus altering the normal trend (Meggers and Evans 1957: 191).

Adoption of the first solution would have reduced the samples for the levels involved to less than 70 Ananatuba phase sherds, less than the minimum number required to give reliable results. Consequently, the second alternative was adopted.

After removal of the disturbed levels of J-7, the upper part of the J-26 sequence fits readily into the Ananatuba phase seriation (Fig. 4). The lower levels enter into the middle third while the upper ones constitute the final portion of the graph. The plain types continue earlier trends, with Sororoco Plain gradually increasing in popularity from 6.2 to 56.0 percent while Ananatuba Plain shows a corresponding decline from 93.0 to 32.6 percent. Sipó Incised and Carmo Brushed, which reach their maximum popularity toward the middle of the sequence, declined thereafter, although showing a somewhat erratic tendency. Ananatuba Painted, of minor and sporadic occurrence during the first half of the period represented, increases to a maximum of 11.9 percent to become the most common decorated type in the latter part of the sequence. This replacement of the diagnostic early decorated types by Ananatuba Painted may reflect internal evolution, acculturation, or possibly loss of sociocultural autonomy by the Ananatuba phase.

Among other Ananatuba phase characteristics described by Meggers and Evans (1957: 194) is an abundance of clay lumps, some bearing stick or cane impressions suggesting derivation from a wattle-and-daub house construction. Similar evidence was encountered at J-26. The small cylindrical pottery object collected from the surface is comparable to an example from

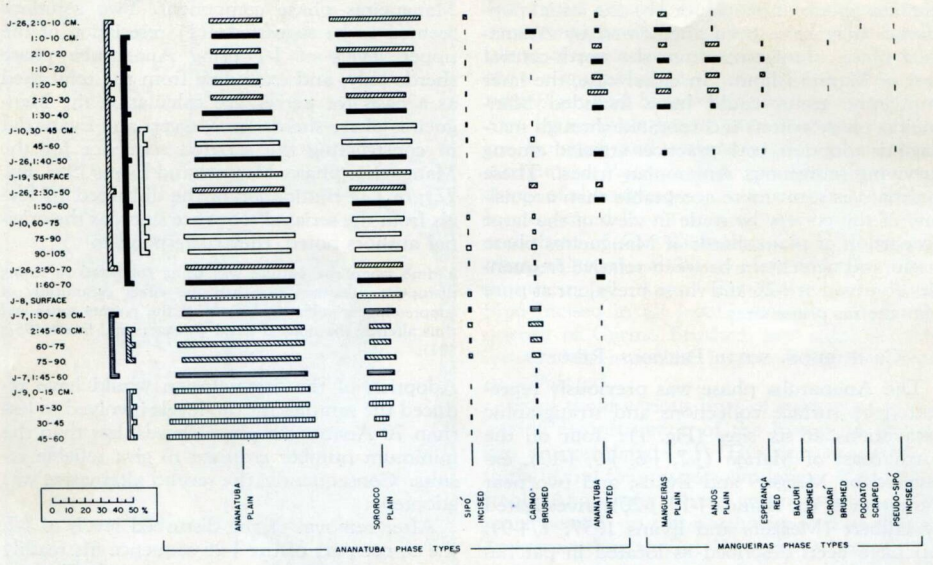

FIG. 4. Seriated sequence for the Ananatuba phase, showing the position of J-26 in relation to sites previously investigated on the north (J-7, J-8, J-9, J-10) and central (J-19) portions of Marajó.

J-5: Croarí, of the Mangueiras phase (Meggers and Evans 1957, Fig. 60), while the pottery cylinders with broken ends resemble objects found at J-9: Ananatuba (Meggers and Evans 1957: 189, Fig. 51).

CONCLUSIONS

The geographical location of J-26, its seriated position, and radiocarbon date, added to previous information, permit reevaluation of inferences regarding the spatial and temporal distribution of the Ananatuba phase.

The geographical location of the previously known sites suggested that the Ananatuba phase occupied an approximately triangular area between the north-central coast, the western forested zone, and Lago Arari on the east (Meggers and Evans 1957: 405, Fig 145). Discovery of J-26 on the middle Rio Camará extends the known distribution of the phase toward the southeast (Fig. 1; Simões 1967: 222).

The relative seriated positions of the various sites suggest that the Ananatuba phase was introduced onto the north coast of Marajó. After an extended period of occupation in this region, represented by J-7, J-8, and J-9, there was an intrusion toward the south and east (J-19, J-20). The priority of J-26 over J-19 raises the possibility that expansion proceeded around the coast rather than through the center of the island. This movement may have been provoked by the pressure from the Mangueiras phase, which after settling on the northern part of Marajó appears to have expanded onto Caviana, the island to the north, and over the Ananatuba phase territory. Interaction between the two phases culminated in domination or assimilation of the latter by the Mangueiras phase.

With regard to the temporal dimension, Meggers and Evans (1957: 253-4) originally estimated that the Ananatuba phase arrived on the north coast of Marajó around A.D. 700. Subsequently, on the basis of new evidence from archaeological investigations in other parts of South America and radiocarbon dating of early ceramic complexes elsewhere, these authors concluded that their estimate was too conservative. The date of 980 B.C. recently obtained from J-26 confirms these reservations.

The stratigraphic level from which the date was obtained seriates approximately one-third of the distance from the top of the seriated sequence (Fig. 4) and equates with the initiation of Mangueiras phase contact. The origin of the phase must be estimated to be somewhat earlier, and the magnitude of ceramic change suggests that 1100 B.C. might be a reasonable guess. This being the case, the introduction of the Ananatuba phase to the mouth of the Amazon is approximately contemporary with the appearance of pottery making in the Orinoco delta (Cruxent and Rouse 1958: 17), although the ceramic complexes involved are quite different. In the present state of knowledge, it is the oldest ceramic culture in the Amazon lowlands.

Although Willey and Phillips (1958: 180-1) considered the Ananatuba phase as "probably closer to Archaic than to Formative standards," the definition suggested by Ford (1966: 872) of the Formative as "the 3,000 years preceding the Christian Era, during which Neolithic-level cultural elements were being diffused and added to the Paleolithic-level cultures that already existed" permits the addition of both the Ananatuba and Mangueiras phases of Marajó Island to the growing list of archaeological cultures representing the American Formative.

If Ford's definition is accepted, the earliest Formative cultures are found on the north and northwest coasts of South America, where recent field work has revealed the existence of ceramic complexes with radiocarbon dates in the fourth and third millennia B.C.: for example, Valdivia on the coast of Ecuador (3200 B.C. ± 150, M-1320); Puerto Hormiga on the Caribbean coast of Colombia (3090 B.C. ± 70, SI-153); and Rancho Peludo on the Venezuelan coast (2680 B.C. ± 150, Y-578). Of these early ceramic complexes, Ananatuba phase pottery most closely resembles that of Puerto Hormiga, with which it shares characteristics of the Zoned Hachure horizon style (Meggers and Evans 1961), such as decorations in zones bounded by broad incisions, and rounded bowl and jar forms. Ford (1966: 782) has suggested that Formative elements diffused from northwestern South America to the southern United States, and Meggers (1967: 146 and Fig. 1) has traced the spread of the Zoned Hachure horizon style from Puerto Hormiga southward to eastern Ecuador and Peru, as well as eastward along the Venezuelan coast. The Ananatuba phase can be explained in similar fashion as the result of diffusion of the same elements into the Amazon basin via the main stream or down its principal tributaries on the left bank. If this hypothesis is correct, the Ananatuba phase is the culmination of the early spread of Formative patterns into the Amazonian lowlands, and a long process of filtration through and adaptation to the tropical forest environment.

Acknowledgments. Site J-26 was discovered and excavated in July of 1965 by José Carlos Cardoso, one of the owners of the Fazenda Santa Maria, on which it is located. Dr. Cardoso was a participant in other field work, and I should like to express my deep appreciation both personally and on behalf of the Museu Goeldi for his helpful collaboration. The archaeological materials and accompanying field notes have been deposited in the Divisão de Antropologia, Museu Paraense Emilio Goeldi, Belém. During and subsequent to the conduct of this research, the author has received support from the Conselho Nacional de Pesquisas. This article was prepared during residence at the Smithsonian Institution as a Fellow of the John Simon Guggenheim Memorial Foundation. The assistance of all of these organizations is hereby gratefully acknowledged.

CRUXENT, J. M. AND IRVING ROUSE

1958 An Archaeological Chronology of Venezuela. *Social Science Monographs*, VI. Pan American Union, Washington.

FORD, JAMES A.

1966 Early Formative Cultures in Georgia and Florida. *American Antiquity*, Vol. 31, No. 6, pp. 781–99. Salt Lake City.

MEGGERS, BETTY J.

1967 The Archeological Sequence on the Rio Napo, Ecuador and its Implications. *Atas do Simpósio sôbre a Biota Amazônica*, Vol. 2, pp. 145–52. Rio de Janeiro.

MEGGERS, BETTY J. AND CLIFFORD EVANS

1957 Archeological Investigations at the Mouth of the Amazon. *Bureau of American Ethnology, Bulletin* 167. Washington.

1961 An Experimental Formulation of Horizon Styles in the Tropical Forest Area of South America. In *Essays in Pre-Columbian Art and Archaeology*, by Samuel K. Lothrop and others, pp. 372–88. Harvard University Press, Cambridge.

Simões, Mario F.

1967 Resultados preliminares de uma prospecção arqueológica na região dos rios Gioapi e Camará (Ilha de Marajó). *Atas do Simpósio sôbre a Biota Amazônica*, Vol. 2, pp. 207–24. Rio de Janeiro.

Willey, Gordon R. and Philip Phillips

1958 *Method and Theory in American Archeology*. University of Chicago Press, Chicago.

Museu Paraense Emilio Goeldi
Belém, Pará, Brazil
March, 1968

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